

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1-18. (Canceled)

1 19. (Previously Presented) A surface mount production system having a
2 conveyor for receiving and moving a printed circuit board through the surface mount production
3 system, the surface mount production system for programming and assembling programmable
4 electronic devices on the printed circuit board, the surface mount production system comprising:
1 a stencil printer machine, communicably coupled to the conveyor, for applying
2 solder paste to the printed circuit board;
3 a chip shooter machine for performing a high speed placement of circuit devices
4 and elements on the printed circuit board;
5 a fine pitch placement machine that places circuit elements and devices at low
6 speed with high accuracy;
7 a reflow oven that cooks the solder paste, thereby soldering to the board all the
8 circuit elements and devices; and
9 an inline programming system communicably coupled to any one or more of the
10 conveyor, the stencil printer machine, the chip shooter machine, the fine pitch placement
11 machine and the reflow oven, the inline programming system having one or more concurrently
12 programmable sites for programming the programmable electronic devices, wherein each
13 programmable electronic device is concurrently and independently programmable.

1 20. (Previously Presented) The system of claim 19 further comprising a
2 pickup and placement device for picking up the programmable electronic devices from the one or
3 more concurrently programming sites and placing the programmable electronic devices on the
4 printed circuit board to form a printed circuit board assembly.

1 21. (Previously Presented) A system for use within a surface mount
2 production line having a conveyor for receiving a printed circuit board, and for moving the
3 printed circuit board through the surface mount production line, the system comprising:
4 a concurrent programming system containing first and second programming sites;
5 a pick and place system for picking up first and second electronic devices from
6 one or more tray shuttles, and for placing the first and second electronic devices within the first
7 and second programming sites, respectively, the first and second electronic devices being
8 programmable in a concurrent manner and independent of each other; and
9 a central control unit for communicating with the conveyor, the concurrent
10 programming system, and the pick and place system, the central control unit directing the
11 conveyor to move the printed circuit board permitting the pick and place system to place the first
12 and second electronic devices on the printed circuit board after the devices are programmed.

1 22. (Previously Presented) The system of claim 21 wherein the
2 concurrent programming system further comprises a controller for each of the first and second
3 programming sites for independently programming each of the first and second programming
4 sites.

1 23. (Previously Presented) The system of claim 21 further comprising
2 tracks or rails enabling movement of the pick and place device within the system.

1 24. (Previously Presented) The system of claim 21 further comprising
2 one or more sensors for detecting when the conveyor delivers a printed circuit board to the
3 system.

1 25. (Previously Presented) The system of claim 21 further comprising
2 four parallel asynchronous processes upon which operations of the system depend.

1 26. (Previously Presented) The system of claim 21 wherein the pick and
2 place device includes self-teaching capability for determining the precise locations at which to
3 pick and place the first and second programmable devices.

1 27. (Previously Presented) The system of claim 22 wherein the pick and
2 place device further comprises a controller for servicing requests from the concurrent
3 programming system and the conveyor.

1 28. (Previously Presented) The system of claim 27 wherein the system
2 making a request provides the location from which to pick up a device.

1 29. (Previously Presented) The system of claim 21 further comprising
2 employing fiducial techniques to determine the location at which the programmable device is to
3 be placed.

1 30.-34 (Canceled)

1 35. (Previously Presented) A system for programming and assembling
2 one or more programmable devices on a printed circuit board, the system comprising:
3 a programming system having one or more programming sites;
4 a pick and place system for picking the one or more programmable devices from
5 one or more receiving media, and for placing the one or more programmable devices within the
6 one or more programmable sites, the pick and place system computing the location and
7 orientation to place the one or more programmable devices on the printed circuit board using
8 fiducial recognition techniques; and
9 a central control unit for communicating with the concurrent programming system
10 and the pick and place system, and for coordinating placement of the one or more programmable
11 devices on the printed circuit board after the devices are programmed by the programming
12 system.

1 36. (Previously Presented) The system of claim 35 wherein the
2 programming system programs the one or more programmable devices by transferring a
3 sequence of operating codes into a memory of the programmable devices.

1 37. (Previously Presented) The system of claim 35 wherein the pick and
2 place device includes self-teaching capability for determining the precise locations at which to
3 pick and place the programmable devices.

1 38. (Previously Presented) The system of claim 35 further comprising a
2 fiducial system for determining the location on the printed circuit board at which the
3 programmable devices are to be placed.